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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/961,283	09/25/2001	Hiroyuki Inagaki	Q66363	5322

7590 06/18/2003

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EXAMINER
RO, BENTSU

ART UNIT	PAPER NUMBER
2837	

DATE MAILED: 06/18/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Applicati n No.	Applicant(s)	
	09/961,283	INAGAKI ET AL.	
	Examiner	Art Unit	
	Bentsu Ro	2837	

-- The MAILING DATE f this c mmunication appears on the cover sh et with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE ____ MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *12 May 2003* .

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-12* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☒ Claim(s) *7,8,11 and 12* is/are allowed.

6)☒ Claim(s) *1-6,9 and 10* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) ____ .
4) ☐ Interview Summary (PTO-413) Paper No(s). ____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other:

SECOND OFFICE ACTION ----- A FINAL REJECTION

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless -
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1, 3, 2, 6, 9, 10 are rejected under 35 U.S.C. 102(b) as being clearly anticipated by **Nakamura et al US Patent No. 5,990,645.** (This is a new reference.)

Claims read onto Nakamura et al teaching as follows:

The claims:	**Nakamura et al teaching:**
1. (Amended) A vibration reduction control apparatus for an electric motor comprising:	see title and Figs. 3, 4;
a detecting means for detecting a motor rotational number of the electric motor and outputting a motor rotational number signal based on the motor rotational number;	Fig. 3 shows a motor angular velocity Vm; the signal Vm is outputted from a motor velocity detector (not shown);
a filter means for extracting a vibration signal of a predetermined frequency band from the motor rotational number signal; and	the motor velocity signal is processed and passed through a high-pass filter, the output of the high-pass filter is a "mechanical vibration signal" as labeled in Fig. 3; it is noted that the high-pass filter has a predetermined frequency band or the high-pass filter itself is a predetermined frequency band;
a feedback control means for performing a correcting process for the vibration signal based on the motor rotational number.	the mechanical vibration signal is a feedback signal to control the motor torque, see Fig. 3 for example.

3. A vibration reduction control apparatus according to claim 1, wherein the predetermined frequency includes at least a resonance frequency band of the electric motor or an assembled body with the electric motor.	Fig. 3 shows a mechanical "resonance" system G_2; the mechanical resonance system G_2 include a resonance frequency ω_r as clearly shown in Fig. 1.
2. (Amended) A vibration reduction control apparatus for an electric motor comprising:	See Fig. 3;
a detecting means for	same as claim 1;
a control means for outputting a torque control signal based on the motor rotational number signal and controlling the electric motor	Fig. 3 shows "TORQUE" signal outputted from a motor drive device 106;
a filter means for extracting a vibrational signal of a predetermined frequency band	the high-pass filter 105;
including a frequency band of a disturbance vibration based on the motor rotational number signal detected by the detecting means;	Fig. 3 also shows a torque disturbance d;
a correcting means for performing a predetermined correcting process which reduces a vibration of the vibration signal for the vibration signal of the predetermined frequency band extracted by the filter means and obtaining a corrected amount; wherein	the phase adjuster 107 and the amplitude adjuster 108;
the control means performs an addition or a subtraction of the corrected amount obtained from the correcting means based on a feedback of the motor rotational number of the torque control signal of the electric motor.	Fig. 3 shows an addition.

6. A vibration reduction control apparatus according to claim 2, wherein the correcting process by the correcting means includes a PD control calculation.	A PD control calculation includes an amplitude adjustment and a phase adjustment, thus, the phase adjuster 107 and amplitude adjuster 108 in a broad sense include a PD controller.
9. (Amended) A vibration reduction control apparatus for an electric motor comprising: a detecting means...; a control means...;	Same as that of claim 2;
a controller for suppressing effect by characteristic fluctuation of a control system based on the motor rotational number, and obtaining a corrected amount compensating sensibility characteristic when the characteristic fluctuation happens; wherein	this portion of controller reads onto the high pass filter 105 and may or may not include the phase adjuster 107 and amplitude adjuster 108;
the controller performs an addition....	Same as claim 2.
10. A vibration reduction control apparatus according to claim 9, wherein the characteristic fluctuation of the control system includes at least one of difference in driving condition, electric motor type, assembled body assembled with electric motor, torque ripple, sensor noise, and a steady component of the motor rotational number.	Nakamura at least teaches "assembled body assembled with the electric motor", see the functional statement in reference numeral 101.

3. Claims 4 and 5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nakamura et al.

Regarding these claims, Nakamura et al do not show the electric motor being mounted on a vehicle body as a driving source of a vehicle. However, an electric vehicle using an electric motor as a driving source is well known art.

Incorporating Nakamura et al driving system to an electric vehicle has an advantage of vibration reduction. In view of the foregoing advantage, it would have been obvious to a skilled person in the art to use Nakamura et al driving system to drive an electric vehicle to achieve the

same subject matter as claimed.

4. Claims 7, 8, 11, 12 are allowable.

5. Applicant's arguments with respect to claims 1, 2, 9 have been considered but are moot in view of the new ground(s) of rejection.

6. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL.** See M.P.E.P. § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CAR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CAR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

June 11, 2003

Bentsu Ro
Primary Examiner